

ABSTRACT

The electro-optical voltage sensor has an electro-optically active medium (1) and a distance medium (2) between two electrodes (3, 4), between which the voltage V to be measured is present. The media (1, 2) and the thicknesses d_1 , d_2 of the media are chosen in such a way that the measured voltage signal has no temperature dependence. By way of example, the thicknesses d_1 , d_2 are chosen in such a way that the influence of the temperature dependences of critical electro-optical coefficients and dielectric constants of the media (1, 2) on the voltage signal cancel one another out. The two media (1, 2) are advantageously arranged in the form of a rod, comprising an alternating arrangement of cylindrical elements of the two media (1, 2), between the electrodes (3, 4). BGO and fused silica may advantageously be used as media (1, 2). The sensor is preferably cast in silicone. It is possible to realize a mechanically stable, temperature-stabilized voltage sensor with low reflection losses, a large half wave voltage and a small sensitivity toward disturbances of the electric field.

(Figure 6)